

NORTH AMERICA.

By A. J. HENRY, Meteorologist.

In the United States and adjacent parts of Canada and Mexico the month, as a whole, was of the mild type of winter weather, there being an absence of the usual sharp changes to cold weather characteristic of the month.

The present winter, therefore, stands in sharp contrast to that of the preceding year. The obvious explanation seems to be that the ridge of high pressure in cold winters that joins the Siberian High to the Continental High of North America was absent and, as has been previously stated, pressure was relatively low over Alaska and the Canadian Northwest.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The atmospheric conditions over the North Atlantic Ocean, for the month under discussion, presented unusual features. While not enough vessel reports were received in time to determine the mean monthly pressure over different sections of the ocean, the observations made at a number of land stations show that in the vicinity of the Azores, Bermuda, and along the American coast from Newfoundland to the Gulf of Mexico, the average pressure was below the normal, the greatest departure occurring at Horta, Azores, where the monthly mean was 29.73 inches, the normal being 30.10. This reversal of the usual conditions was responsible for exceptionally severe weather in the region south of the 40th parallel, while over the northern steamer lanes gales were unusually prevalent, and the "westerlies" that can ordinarily be depended on in that region were replaced, during a large part of the month, by winds from the easterly quadrants.

On February 1 strong southeasterly gales of a maximum force of 65 miles an hour, accompanied by "hail" and snow, prevailed over the region between the 30th meridian and the Irish coast, and on the same date westerly winds of gale force were encountered near the 40th parallel and 60th meridian.

The European disturbance moved rapidly eastward, as on the 2d moderate winds were the rule over the storm area of the day before, the same conditions holding true, for the most part, in the waters adjacent to the American coast. On the 3d moderate gales were reported from a limited area between the 38th meridian and the Azores. From the 4th to the 6th the atmospheric circulation was comparatively stagnant, with light to variable winds prevailing over practically the entire ocean. On the 7th the barometric reading at Horta, Azores, was 29.34 inches, being a fall of over half an inch since the previous day; a few reports were received from vessels in widely scattered sections of the ocean, denoting winds of gale force, although comparatively moderate weather prevailed in the vicinity of the Azores. By the 8th the barometer at Horta had fallen to 28.96 inches, accompanied by southeasterly gales of over 50 miles an hour, while the greater part of the region between that locality and the Bermudas was storm swept, and strong northeasterly gales were also encountered off the Irish coast. The storm center moved about 5 degrees toward the north during the next 24 hours, and on the 9th the greater part of the steamer lanes east of the 30th meridian was swept by moderate to strong gales, while unusually heavy weather for the latitude was also reported south of the Azores. During the next 24 hours there was apparently little change in the position and intensity of the dis-

turbance, except that on the 10th no gales were reported over the eastern section of the ocean south of the 40th parallel, and a second low had formed near the Bermudas, which afterwards developed into an unusually severe storm. This disturbance shifted slowly northward, and reached its greatest intensity on the 11th when the center was near latitude 40, longitude 52; northwest winds of hurricane force, accompanied by snow, prevailed, with a minimum barometric reading of 28.80 inches, while the storm area extended from the 30th to the 45th parallels and from the 45th to the 63d meridians. The eastern low of the 10th had moved but slightly and decreased somewhat in intensity, although practically the entire ocean west of the 20th meridian was swept by gales. By the 12th the western disturbance had drifted slightly northward, and the center was now not far from St. Johns, N. F.; westerly winds of over 50 miles an hour, with "hail" and snow, were still encountered over the area between the 35th and 47th parallels, and the 45th and 60th meridians. During the next 24 hours this low moved but slightly and decreased in violence, although a few reports were received showing that on the 13th there were moderate gales over the western portion of the steamer lanes. The disturbance shifted slowly eastward, reaching the European coast on the 18th, when moderate southeast gales were recorded.

On the 17th a fairly well developed low was central near latitude 40, longitude 55, and westerly winds of about 40 miles an hour were encountered by a number of vessels between the center and the American coast. Moving slowly eastward, by the 19th, the center had reached a point near latitude 45, longitude 47, where the barometer reading was 28.82 inches, and at the same time there was a high with a crest of 30.40 inches near Hatteras. Westerly gales of from 40 to 50 miles an hour prevailed in the vicinity of the low, while the anemometer at New York registered a northwesterly gale of nearly 60 miles an hour, the barometer reading 30.22 inches. On the 20th the center of the low was near latitude 45, longitude 38, and the high near Norfolk, Va. Moderate gales with snow occurred off the coast of Newfoundland and vessels in the vicinity of the Bermudas encountered northerly winds of over 40 miles an hour. On the 23d there was a disturbance about half way between the Azores and the Irish coast; easterly winds of 40 miles an hour prevailed in the northern quadrants, while westerly gales of greater velocity were reported a short distance south of the center.

On the 24th a low was central near Halifax, N. S., and strong easterly gales with snow swept the south coast of Newfoundland, while westerly winds of somewhat less force were reported from the waters adjacent to the New England coast, practically the same conditions existing also on the 25th.

During the remainder of the month there were no well-defined storm areas, although a number of reports were received from vessels in the western division of the ocean, that encountered moderate gales.

The following is an extract from a very interesting letter received from the commanding officer of the U. S. S. *Charleston*:

1. Forwarded herewith are inclosures descriptive of the storm, apparently an extra-tropical cyclone, of the recurring type, encountered by the U. S. S. *Charleston* on February 10-11, 1919, about 200 miles east of Bermuda in latitude 32-20 N., longitude 60 W.

2. It is noted that the S. S. *Accoma* was abandoned in about latitude 36-30 N., longitude 62-40 W., at noon on February 11, after evidently having encountered the storm herein described. Attention is invited to the fact that from our plotting of the storm track the *Accoma* was nearest the storm center at 6 p. m., February 10.